

ABSTRACT

The present invention provides a thermal processing apparatus that conducts a thermal process such as an annealing process at a temperature of 400°C or more to an object to be processed. The apparatus is provided with a processing vessel (4) having a transmitting window (8) in a top part thereof. A table (10) is disposed in the vessel, that supports thereon the object (W) opposed to the transmitting window. A plurality of heating lamps (42A, 42B) are disposed above the processing vessel, that heat the object by irradiating heat rays to the object through the transmitting window. A thermoelectric converter (24) is disposed on the table and configured to at least cool the object. When a temperature of the object is increased, the object is mainly heated by the heat rays from the heating lamps. When the temperature of the object is decreased, the object is forcibly cooled by means of the thermoelectric converter.